

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application:

Listing of Claims:

1. (Currently Amended) A friction stir welding method, comprising:  
abutting an end portion in the width direction of a first hollow shape member against an end portion in the width direction of a second hollow shape member,  
wherein the first hollow shape member comprises two face plates; a first connecting plate for connecting the two plates, at least one end of which is connected to a region other than said end portion; a second connecting plate for connecting said end portions of said face plates that is disposed substantially orthogonal to said face plates; recessed portions formed respectively to connecting portions where said two face plates of said first hollow shape member are each connected with said second connecting plate, each recessed portion opening outward toward both the width direction and the thickness direction of the hollow shape member; a groove or projection formed to one recessed portion; and a groove or projection formed to the other recessed portion,  
wherein the second hollow shape member comprises two face plates, a first connecting plate for connecting the two face plates of the second hollow shape member, at least one end of which is connected to a region other than said end portion of the second hollow shape member; a projection or groove formed to one face plate at said end portion of said second hollow shape member; and a projection

or groove formed to the other face plate at said end portion of said second hollow shape member,

and wherein ~~said projections are each~~ projection is inserted into to a respective corresponding groove, respectively, when said first and second hollow shape members are abutted against each other; and

disposing a rotary tool on an extension of plate thickness of said second connecting plate, thereby friction stir welding said abutted region from an outer direction of thickness of said hollow shape members.

2. (Original) A friction stir welding method according to claim 1, wherein said friction stir welding is performed to weld said abutted region, and said grooves and said projections, respectively.

3. – 4. (Cancelled)

5. (Previously Presented) A friction stir welding method according to claim 33, wherein said recessed portion and said projection are disposed within the range of diameter of a small-diameter portion of said rotary tool being inserted to said plates upon performing the friction stir welding.

6. (Previously Presented) A friction stir welding method according to claim 33, wherein the central axis of said rotary tool is disposed within the range of depth of said recessed portion upon performing the friction stir welding.

7. – 8. (Cancelled)

9. (Currently Amended) A friction stir welding method, comprising:  
abutting an end portion in the width direction of a first hollow shape member  
against an end portion in the width direction of a second hollow shape member,  
wherein said first hollow shape member comprises two face plates, said two  
face plates each having either a groove opening toward the width direction or a  
projection protruding toward the width direction, formed at one width-direction-end of  
said first hollow shape member, said projection of the face plates of the first hollow  
shape member extending beyond an end of said end portion of the first hollow shape  
member,  
wherein said second hollow shape member comprises two face plates, said  
two face plates each having either a projection protruding toward the width direction  
or a groove opening toward the width direction, formed at one width-direction-end of  
said second hollow shape member, said projection of the face plates of the second  
hollow shape member extending beyond an end of said end portion of the second  
hollow shape member, and  
wherein ~~said projections are each~~ projection is inserted to into a respective  
corresponding groove, ~~respectively~~, when said two hollow shape members are  
abutted against each other; and  
performing friction stir welding of said first and second hollow shape members  
where they abut each other to weld said abutted regions, and said grooves and said  
projections.

10. (Previously Presented) A friction stir welding method according to claim 9, wherein said groove and said projection are disposed within a range of diameter of a small-diameter portion of a rotary tool being inserted to said first and second hollow shape members upon performing the friction stir welding.

11. (Previously Presented) A friction stir welding method according to claim 10, wherein the central axis of said rotary tool is disposed within a range of depth of said groove upon performing the friction stir welding.

12. (Previously Presented) A friction stir welding method according to claim 9, wherein the central axis of said rotary tool is disposed within a range of depth of said groove upon performing the friction stir welding.

13. – 24 (Cancelled)

25. (Previously Presented) A friction stir welding method according to claim 1,

wherein each recessed portion includes a protruded block, and  
wherein the protruded blocks support respective face plates of the second hollow shape member.

26. (Previously Presented) A friction stir welding method according to claim 1,

wherein said second hollow shape member does not have a connecting plate substantially orthogonal to the two face plates of the second hollow shape member, at said end portion thereof.

27. (Currently Amended) A friction stir welding method according to claim 1,

wherein in said abutting, end surfaces of the face plates are disposed substantially on an extension of the center line of the thickness of the second connecting plate.

28. (Previously Presented) A friction stir welding method according to claim 1,

wherein thickness of the face plates of the first hollow shape member is greater at the abutted portions of the first hollow shape member to the second hollow shape member than at other portions thereof.

29. (Previously Presented) A friction stir welding method according to claim 1,

wherein in said disposing said rotary tool, the central axis of the rotary tool is positioned on an extension of plate thickness of the second connecting plate.

30. (Previously Presented) A friction stir welding method according to claim 1,

wherein the rotary tool includes a small-diameter portion and a large-diameter portion, the small-diameter portion extending beyond the large-diameter portion, and

wherein the rotary tool is disposed such that the small-diameter portion is inserted to a depth beyond the bottom surface of the recessed portion.

31. (Previously Presented) A friction stir welding method according to claim 1,

wherein the rotary tool is disposed such that during the friction stir welding, the projections are plasticized.

32. (Previously Presented) A friction stir welding method according to claim 25,

wherein the rotary tool is disposed such that during the friction stir welding, each protruded block is plasticized.

33. (Currently Amended) A friction stir welding method, comprising:  
abutting an end portion in the width direction of a first plate of a first hollow shape member against an end portion in the width direction of a second first plate of a second hollow shape member, each of the first and second hollow shape members having first and second plates and connecting plates therebetween,

the first plate of the first hollow shape member including one end having a recessed portion opened outward toward both the width direction and the thickness direction of the first plate of the first hollow shape member, and

the second first plate of the second hollow shape member including one end having a projection protruding outward to the width direction of said first plate of the second hollow shape member, beyond an end of the end portion thereof,

said projection of said ~~second~~ first plate of the second hollow shape member being inserted into to said recessed portion of the first plate of the first hollow shape member when performing said abutting; and

    disposing a rotary tool so as to perform friction stir welding at the abutting end portions of the first ~~and second~~ plates of the first and second hollow shape members by inserting the rotary tool at the abutting end portions from the outer direction of thickness of the first ~~and second~~ plates of the first and second hollow shape members, the rotary tool being inserted such at that a small-diameter portion of the rotary tool extends beyond a bottom surface of the recessed portion.

34. (Currently Amended) A friction stir welding method according to claim 33,

    wherein the first plate of the first hollow shape member further has a groove portion opening outwardly in the width direction of the first plate of the first hollow shape member, said groove portion opening into the recessed portion, and

    wherein said projection is inserted to said groove portion when performing said abutting.

35. (Currently Amended) A friction stir welding method according to claim 34,

    wherein both said groove portion and said projection have trapezoidal shapes.

36. (Currently Amended) A friction stir welding method, comprising:

abutting an end portion in the width direction of a first plate of a first hollow shape member against an end portion in the width direction of a second first plate of a second hollow shape member, each of the first and second hollow shape members having first and second plates and connecting plates therebetween,

the first plate of the first hollow shape member including one end having a groove portion opening outward toward the width direction of the first plate of the first hollow shape member, and

the second first plate of the second hollow shape member including one end having a projection protruding outward in the width direction of said second first plate of the second hollow shape member, beyond an end of the end portion thereof,

said projection of said second first plate of the second hollow shape member being inserted to into said groove portion of the first plate of the first hollow shape member when performing the abutting; and

disposing a rotary tool so as to perform friction stir welding at the abutting end portions of the first and second plates of the first and second hollow shape members by inserting the rotary tool at the abutting end portions from the outer direction of thickness of the first and second plates of the first and second hollow shape members.

37. (Currently Amended) A friction stir welding method according to claim 36,

wherein one of the first plate of the first hollow shape member and the second first plate of the second hollow shape member further includes a recessed portion opening both outwardly in the width direction and upwardly in the thickness direction,

the groove portion being positioned in the recessed portion where the first plate of the first hollow shape member includes the recessed portion, and the projection being positioned in the recessed portion where the second first plate of the second hollow shape member includes the recessed portion.

38. (Currently Amended) A friction stir welding method according to claim 37,

wherein the other of the first ~~and second~~ plates of the first and second hollow shape members, other than said one of the first ~~and second~~ plates, does not have a recessed portion, and said other of the first ~~and second~~ plates is positioned in said recessed portion during said abutting.

39. (Previously Presented) A friction stir welding method according to claim 37,

wherein said rotary tool is inserted to a depth beyond a depth of the lower surface of the recessed portion.

40. (Previously Presented) A friction stir welding method according to claim 36,

wherein both said groove portion and said projection have trapezoidal shapes.

41. (New) A friction stir welding method according to claim 9, wherein an abutting face plate of the first and second hollow shape members has a recessed portion, the recessed portion opening outward toward both the width direction and a thickness direction of the abutting face plate having the recessed portion, and

wherein a projection or groove of the abutting face plate having the recessed portion, is provided within the recessed portion.

42. (New) A friction stir welding method according to claim 1, wherein the face plates of the second hollow shape member are provided with the projections, and the projections extend beyond the end of the end portions of the face plates of the second hollow shape member, provided with the projections.